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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Martin W. Trimby

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EXAMINER

LAY, MICHELLE K

ART UNIT

PAPER NUMBER

2628

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,589	Applicant(s) TRIMBY ET AL.	
	Examiner MICHELLE K. LAY	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 12/15/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1-2, 4, 7, 15, 19, 22, 32, 35, 41, 44** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim **1** recites the limitation "the topology" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim **2** recites the limitation "*the* density of *the* nodal mesh density between said start point and said end point" and "*the* density of *the* nodal mesh prior to the selection of a start point and an end point" in line 3. There is insufficient antecedent basis for this limitation in the claim. Additionally, it is unclear if "the selection of a start point and an end point for said path" are the same as said start point and said end point defined in claim 1.

Claims **4** and **19**, recites the limitation "the mid point" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims **7** and **22** recites the limitation "the location" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim **15** recites the limitation "the Euclidean distance" in line 2 and "the centre of the respective region of influence" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim **32** recites the limitation "the topology" and "the vicinity" in line 8, "the region" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim **35** recites a method claim being dependent from claim 41. However, claim 41 recites a system claim. Therefore, it is unclear from where claim 35 depends from or if in fact claim 35 should be a system claim. Due to the severity of the 35 USC §112(2) rejection, no prior art rejection can be made.

Claim **41** recites the limitation "the curvature" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim **44** recites the limitation "the user" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims **1-50** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-50 recites a method that fails to set forth a practical application of that §101 judicial exception to produce a real-world result.

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Benson, 409 U.S. at 71-72, 175 USPQ at 676-77. “[A]n application of a law of nature or mathematical formula to a ... process may well be deserving of patent protection.”

Diehr, 450 U.S. at 187, 209 USPQ at 8. “It is for the discovery or invention of some practical method or means of producing a beneficial result or effect, that a patent is granted ...”. Corning, 56 U.S. (15 How.) at 268, 14 L.Ed. 683.

Claim(s) **1-17, 32-40** is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. The Applicant has provided no explicit and deliberate definitions of the steps recited in claims 1-17, 32-40 to limit the steps to an electronic form.

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claims **18-31, 35, 41-44** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 18-31, 35, 41-44 recites a system that solely calculates an algorithm. This is not directed to the type of subject

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matter eligible for patent protection. One may not patent a process that comprises every “substantial practical application” of an abstract idea, because such a patent “in practical effect would be a patent on the [abstract idea] itself.” Benson, 409 at 71-72, 175 USPQ at 676; cf. Diehr, 450 U.S. at 187, 209 USPQ at 8. Although the claims’ preamble states an apparatus (it *does* claim an invention within one of the statutory classes), the limitations of the claim are directed to an abstract idea, i.e., it is in reality seeking patent protection of the instructions, therefore claiming an invention that falls/covers/includes a judicial exception. Ergo, there is no practice application by physical transform, i.e., the “program”. The claim is in fact reciting limitations of the instructions/program and not limitations of the apparatus to produce a result.

Claims **45-50** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 45-50 recites a storage medium carrying computer readable code. Applicant's disclosure teaches storage medium carry computer readable code, a computer program comprising instructions, and a computer data signal embodied in a carrier wave [pg.6 L.24-pg. 7 L.13]. The United States Patent and Trademark Office (USPTO) is obliged to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO (see *In re Zletz*, 893 F.2d 319 Fed. Cir. 1989). The broadest reasonable interpretation of a claim drawn to a computer readable medium (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary

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meaning of computer readable media, particularly when the specification is silent (see MPEP 2111.01). Thus, the definition of Applicant's storage medium in the disclosure provides an open ended listing of computer-readable mediums fails to limit the claim to only non-transitory tangible media, and therefore is non-statutory (see *1351 Off. Gaz. Pat. Office* 212 (February 23, 2010)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 18, 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Lester ("A*Pathfinding for Beginners").

In regards to claims **1, 18, 45**, Lester teaches A*Pathfinding algorithm. As shown in Fig. 1, point A and point B are defined as **starting** and **destination point**, respectively [pg.1]. The shortest path is determined by initially checking the adjacent squares (said **new point located on line of sight**) surrounding the starting point, and then generally searching outward until the destination point is found [pg.2]. The adjacent square with the lowest F score is chosen (referred to as square 2). Then, the adjacent squares surrounding square 2 are now considered (said **calculating the path based on any combination of new and/or initially defined points**) and the adjacent square with the

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lowest F score is chosen (referred to as square 3). This continues until the destination point is found (said ***dynamically redefining the topology by generating a plurality of additional points***) [pg.4-6].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lester ("A*Pathfinding for Beginners") in view of St.Julien et al. ("Firefighter Command Training Virtual Environment").

In regards to claim **3**, Lester teaches the limitations of claim 2 with the exception of explicitly teaching the virtual environment represents a virtual world. However, St.Julien teaches a firefighter training virtual environment where the virtual environment provides a variety of firefighting scenarios as shown in Figs. 1 and 2 (said ***virtual world***). It would have been obvious to modify the method/system of Lester to use the path finding system in a virtual world because St.Julien teaches using the A*path finding algorithm to plan the path for the firefighters [pg.31].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sabe et al. (7,386,163 B2)

Kawakami (6,028,609)

Shibolet (7,167,180)

Lorensen et al. (5,611,025)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle K. Lay whose telephone number is (571) 272-7661. The examiner can normally be reached on Monday-Friday 7:30a-3:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee M. Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michelle K. Lay/
Primary Examiner, Art Unit 2628
27 August 2010